

## **DRAFT REPORT**

### **12<sup>th</sup> meeting of the GRSG informal group on Accident Emergency Call System (AECS)**

Venue: Central research and development automobile and engine institute NAMI (FSUE "NAMI")

Chairman: Mr. Denis Zagarin (RUS) (zagarin@autorc.ru)  
Secretariat: Mr. Olivier Fontaine (OICA) (ofontaine@oica.net)

Dates: Tuesday 9 February 2016  
Thursday 11 February 2016

#### **1. Welcome and Introduction**

M. Burmistrov welcomed the participants to the meeting on behalf of the Ministry of Industry and Trade of the Russian Federation (as Deputy Director of the Department of Transport and Special Engineering Industry). He informed about the number of fatalities in 2015 on the RUS road network and communicated the commitment of the RUS government to make efforts on both the infrastructure and the vehicle design, with good hope to improve the situation. RUS PSAPs receive several of thousands of ecall every year, among which a good proportion are real. The persons saved by the ecall are thankful to this technology.

Mr. Burmistrov also mentioned how the national regulations are currently developing, and hence how much the work of the working group is important in helping to save lives. Mr. Burmistrov finally thanked NAMI for hosting the working group and wished good progress on behalf of his ministry.

#### **2. Approval of the agenda**

Document: AECS-12-02 (Chair - Secretariat)

#### **3. Revision and approval of the draft minutes of the 11<sup>th</sup> meeting**

Document: AECS-11-11 (Chair - Secretariat) draft report

#### **4. Revision of the main pending items**

Document: AECS-02-02-Rev.7 (Secretariat)

##### **4.1. Scope of the regulation**

Conclusion: adoption of a new item 1.2.(d) on Periodical Technical Inspection

##### **4.2. AECD homologation (Part I)**

###### **4.2.1. Personal input from the OICA representative**

Documents: AECS-12-10 (OICA Spokesman)  
AECS-12-09 (OICA Spokesman)

###### **Approval procedure**

The OICA spokesman presented AECS-12-10 about the approval procedure, as a personal view since OICA did not receive input from all members to date. The expert clarified that the AECD

control unit, the network antenna and the power supply must be taken as examples, and that some other features could be added. The AECS-12-09 shows the necessary changes to the current text of the AECS draft regulation.

Chair stressed that this approach could dramatically change Part II of the draft regulation, and feared that this could delay the results. OICA found on the contrary that such approach could be done very easily.

Qualcomm questioned whether this approach would permit the heritage of existing certifications. OICA clarified that the proposed approach only carries over the existing provisions of paragraph 7.3. and 16.1.3 of the draft text. Hence, the certifications addressed under Part I should be endorsed under Part II, there is no intention to add any new test or certification work.

CLEPA supported the OICA approach.

The European Commission found that this approach is new at EU level, and must be assessed on how much this can be adapted at EU level. The delegate was not opposed to the approach, but warned that some necessary additional work would be needed. The expert suggested to postpone the adoption of the approach.

RUS questioned which particular component can be approved separately, because the process may be simple for the battery, but more complex for e.g. the microphone.

The group held a debate on the amount of changes necessary to the draft text.

J wondered the feasibility at approval time and found that the proposal would make the approval process very complex. In addition, the expert wondered the necessity of the Part III. J then suggested changing the title of Part II as follows: "Part II: the approval of vehicles of categories M1 and N1<sup>1</sup> with regard to the installation of an Accident Emergency Call Device(s) which has been approved **to all applicable requirements of** Part I of this regulation". Yet J was ready to reconsider a new OICA approach.

F understood the target, but questioned the feasibility. The expert suggested further investigation for which component is in stake

D understood and supported the approach, but suggested further regulations, e.g. seat belt for minibuses etc. The expert shared the opinion of the chair that this would need in-depth analysis.

RUS shared this concern, but supported the idea. But the expert insisted that the priority at this time would be to finalize the work. Some necessary amendments could be added at the next phase.

OICA acknowledged the agreement on the principle. OICA committed to reconsider the proposal for the next meeting, and see whether this can be integrated into the 00 series, or to the 01 series of amendments to the regulation.

#### Conclusion:

- Informal group to continue working on the current text for the time being
- OICA to develop a further proposal, checking integration into 1<sup>st</sup> phase
- Comments to be provided at the latest 2 weeks prior the next meeting (i.e. 30 March 2016).

#### Definition of AECD under Part I

The experts then had a debate on the necessary changes to paragraph 3.1. (definition of AECD under Part I). CLEPA committed to re-visit this definition, and stressed that the current definition on purpose focuses on the functions (vs. the components). The delegate from CLEPA then questioned: can a supplier get an approval to Part I if the AECD has no warning signal feature?

The proposed text evolved as below:

"3.1 "AECD (*Accident Emergency Call Device*)" means a unit or a set of units performing at least the following functions:

- **receiving and/or generating the automatic and manual triggering signals, and**
- **sending the data**

#### **It may in addition perform one of the following functions:**

- receiving or determining the vehicle location,
- providing a warning signal
- allowing bidirectional audio signals for voice communication"

RUS stressed that if some functions are optional in the definition, then they must be regulated elsewhere. Yet Part II is only installation. When changed, the wording must ensure that the features are mandatory. The expert preferred to keep the wording unchanged, and come back to it if necessary, as there is a need for a full list of features.

D, J, European Commission, and F supported this approach, with the addition of a last part in the sentence “*unless specified otherwise in this regulation*”.  
OICA and CLEPA supported the proposal.

Conclusion on paragraph 3.1. (definition of AECD under Part I): text amended as above adopted.

#### Energy absorption in case of crash

OICA presented AECS-12-08

OICA presented the document and explained that the crash energy absorption strategy of the vehicle may cover the case when the mountings elements are designed to deform in case of crash for energy absorption. The OICA spokesman informed that the EU already changed the corresponding text in the EU draft regulation (eCall delegated act: Annex I - 2.3.2): “*If the intended mountings of the power source are specifically designed to break in order to release the power source in an impact event, they shall not be included in the test. The technical service shall verify that such release in a real-life high-severity crash event shall not impair the functionality of the system (e.g. no disconnection from the power source).*”

D challenged the OICA proposal because it is almost sure that the battery will fly in the engine compartment.

The chair informed that he had no experience of any battery flying in case of a crash test, hence found such special sentence unnecessary.

RUS pointed out that some flexibility can be used by the manufacturer for lowering the pulse.

Hence the expert suggested that the fixation should as best as possible simulate the reality.

F and J questioned the need of a special fixture only for the optional components of paragraph 7.6.2.

The Secretary suggested to simplify the text as it is currently proposed in the draft text. D, F and J informed that they would apply the text such to be as close as possible to the reality. In case the Technical Service does not know the final installation, then they will apply the most rigid configuration.

OICA was keen to have the possibility of using the mounting of the real vehicle.

A long debate took place. The experts reviewed the text prepared by the EU (see above). The current wording of the draft AECS regulation refers to “power supply”, OICA favours the EU wording of “power source”.

Conclusion: new wording adopted as in the working document.

#### 4.2.2. Position determination

Document: AECS-12-03 (GSA)

GSA presented the above document. J pointed out some further typos, and raised that J experts supported the study of GSA.

Conclusion: AECS-12-03 adopted unchanged, to be introduced into the draft text of the regulation.

Qualcomm presented AECS-12-15 (already communicated for the AECS-11 meeting).

RUS stressed 2 concerns: confidence level and the model of approximation (gauss vs. circulate error). RUS found both approaches equivalent, and suggested to verify the choice in phase 2 of the regulation.

GSA had the same position as RUS, yet recognizing the good results that the Qualcomm proposal would achieve. The expert proposed that a clear decision be made such to close the “GNSS” file.

D was of the opinion that if the group wants to achieve the 95 %ile results, then the Qualcomm proposal should be chosen.

The expert from J could not accurately judge the relevancy of the proposal, but proposed not to change the text for the time being.

F was of the opinion that the proper calculation should be included to reach the target of 95% accuracy.

The proposal was revised overnight by the experts. RUS presented their reaction to the Qualcomm

proposal per document AECS-12-18. If the distribution is normal, then the formula provides an accuracy of 95%, if the distribution is not normal, then the accuracy does not provide that level of accuracy. The expert proposed to:

- Keep the text as is
- Change the formula and keep the requirements, or
- Change the formula and change the requirements.

The chair proposed that either

- The group keeps the text unchanged, and the group can amend the regulation in the 01 series, or
- Discuss this issue until the next meeting.

Qualcomm showed cases where the current formula would provide results inverse to the reality. The chair requested the interested experts to meet informally, and to communicate their decision to the group, together with some information on the magnitude of the problem (implication for the end user and for the homologation).

After bilateral debates, the interested experts informed they did not arrive to a preferred solution, and believed that each of the methods can be used for testing. Hence the experts proposed to let the alternative, left at the discretion of the applicant, between the current text, or the means as proposed by Qualcomm. The expert from Qualcomm committed to distribute the proposed amendment the week following AECS-12. Comments should be exchanged of-line, with a final decision at next session.

The chair wondered whether an alternative could work in the frame of the UN system. The Secretariat clarified that such alternative is possible under the 58 Agreement, e.g. in UN R13H, if both methods are recognized as equivalent.

OICA requested a clear overview of the pros and cons of each methods. Qualcomm informed to be able to provide such document.

RUS repeated their concern of eliminating an existing test method.

F, supported by CLEPA was supportive of the approach of an alternative at the choice of the applicant.

J wondered whether the 2 methods are really equivalent if some vehicles could pass/fail according to the method. Qualcomm clarified that there is currently no knowledge of the number of such cases that may occur since the new proposed method was never tried.

The chair pointed out that in Court, such item is never used for prosecution, meaning that there is no risk for the manufacturer.

A debate took place on the relevant criterion: approval risk to the manufacturer vs. quality of the recall. It was clarified that:

- The calculation method does not affect the quality of the AECD
- The criterion is on the side of the pass/fail risk at the manufacturer's side.

Conclusion: exchange of comments per email until next meeting. Final decision at next meeting.

#### 4.2.3. AECD warning signal

The experts reviewed the Table of paragraph 7.4.2.1. (malfunction indication strategy)

##### Debate on the internal failure of crash control unit:

OICA informed having reviewed the table and wanting the deletion of the internal failure of crash control unit as not all systems have currently the possibility to communicate such failure (no connection to the CAN bus). In addition there is no need for such indication as it would double indication (airbag dysfunction). Such airbag warning would illuminate, and the driver would then have to consult the workshop. It is a decision of the driver to drive or not with a failed safety system.

D and J challenged this position as the airbag tell-tale is not mandatory.

The chair clarified that the crash control unit is part of the definition of the AECD, hence it makes sense to keep this entry in the table.

The chair had the following opinion: on the one hand this is under PTI field, on the other hand, as for airbags, the driver should know that the signal will be triggered automatically. If he knows

there is a failure he can go to the workshop. There may be a different decision from the driver if the warning is about the airbag vs the ecall. J supported this opinion.  
F found important that the AECS has a dedicated warning signal.

Debate on dedicated battery:

D proposed to copy/paste the wording they provided to the European Commission (see working document)

J supported this D proposal.

OICA found this a good approach, subject to confirmation at the next meeting.

Conclusion: adopted, subject to OICA counter-proposal at next meeting.

Debate on GNSS

J recalled that the positioning is optional, while the GNSS receiver is mandatory.

RUS clarified that the approval of GNSS is optional in the regulation.

Conclusion: no change to the GNSS references in the table.

Debate on removable SIM card

RUS recalled that RUS does not accept removable SIM cards.

J questioned the meaning of paragraph 7.3., seems it makes non removable SIM card mandatory.

Yet the European Commission recalled that the intention of such sentence was for avoiding the use of mobile phone, rather than referring to the type of SIM card.

Chair pointed out that the driver should not have the possibility of removing the SIM card by himself, yet for repair or maintenance this may be relevant. The EU delegated act refers to "SIM present" and this addresses removable SIM card.

Debate about Option1 / Option2 approach

The European Commission informed that EU decided to follow Option 1. The European Commission was keen to include the level of charge of the battery because it is important, but was ready to abandon the health of the battery as it is technically demanding. As the table is a list of mandatory items, the group must still discuss the relevant items (control unit, SIM card, dedicated battery).

J confirmed their position with regard to Option1/Option2: they favoured Option1 because it implies a mandatory list. F and D supported that position

RUS recalled that the table is currently under Part I of the draft regulation, hence the need for relevant modifications.

Conclusion: The group agreed with the texts of the tables as amended in the working document, yet some improvements in the paragraph 7.4.2.2. and 16.4.3.2. are still necessary.

*4.2.4. Power supply*

Documents: AECS-12-13 (RUS)  
AECS-12-11 (J)

RUS and J presented their respective documents.

The Tests were performed by acceleration (J) and deceleration (RUS).

The European Commission was happy to see the proposed test performed in real conditions. The expert committed to provide the presentation to TRL for their best convenience, yet considered very hard now to change the proposed test of the Delegated Act.

The chair summarized that both RUS and J feared for the durability of their testing equipment. The RUS equipment may not survive such test.

D acknowledged the results, yet reminded that they stressed the too high level of deceleration at the beginning of the discussions.

OICA pointed out that the manufacturers also had the concern of their equipment durability. The

European Commission clarified that while the test pulse curve of the delegated act could not be changed for the time being, due to it was accepted at EU level in view of the lack of solid evidence that the test could not be performed, a text at UN level proposing a slightly amended pulse, with no large difference in terms of severity, could be envisaged and accepted at EU.

Conclusion: item to be reviewed at the next meeting, where a decision will be made on the RUS and J proposal (slightly changing the shape of the curve).

#### Repeatability of the sled test

The European Commission confirmed their position via an email that the test pulse should not be changed due to problems of testing facilities equipment.

RUS repeated their concern about the durability of the testing equipment and requested a change in the pulse.

J repeated their position and proposed to consult with RUS, F and TRL/European Commission for achieving a reasonable compromise.

The chair questioned whether the Technical Services have the budget to add a 1,5 billion € equipment for these tests.

The European Commission found that argument not relevant as TRL and J currently do have such facility.

OICA recalled that the manufacturers did investigate the feasibility of the test pulse, and as some OEM could not perform the test internally, they relied on the Technical Services to perform it. The problem now is raised that even the Technical Service cannot guarantee to perform the test.

D clarified that it is just a question of price for performing the tests.

F proposed the approach of UN R16, where the test can be performed either by acceleration or deceleration, with different constraints for deceleration vs. acceleration (see annex 8 of UN R16).

D informed that the reason of the red line was related to COP test, because most of the Technical Services performing acceleration test were close to the lower limit of the corridor. F clarified that the idea would be to adapt the pulse to the testing equipment, not simply copy/paste the UN R16 approach. F in addition shared the concerns of RUS and J.

RUS committed to investigate whether this approach could help their Technical Services solving their concern.

Conclusion:

- Further information to be exchanged between the interested parties for deciding whether the test pulse must be modified or not.
- If test pulse to be modified, then interested parties to investigate reasonable solution.

#### 4.3. Vehicle homologation with regard to AECD installation (Part II)

J introduced the subject of AECS switch-off. J indicated that such approach is already included into QRTV (approved under GRB).

The chair pointed out that the results of the discussions at GRSG-109 was not that clear. He suggested to address this item later.

The European Commission informed that there is no provision on that in the Ecall regulation itself. The tendency at different occasions of the EU discussions (EP, MVWG, etc.) was that there is no possibility to switch-off the system for having the most benefits of the regulation. NL, and other MSs were of the opinion that it is clearly indicated in the regulation that there is no possibility to switch off the AECS.

OICA found the proposed J wording a bit too restrictive. Can the removal of a fuse be considered the use of a special tool? The J proposal would need a lock of the fuse.

RUS informed that it is not directly mentioned in the RUS legislation, but as the AECS is regulated, the user is responsible for keeping his vehicle conforms to the regulation.

OICA made the following comments:

- In EN 16072, there is a provision that the vehicle owner can ask for a permanent switch-off by the workshop; i.e. meaning that there is in fact 2 modes: permanently OFF or automatically ON when ignition ON

- GOST (GOST 54620) has a provision for maintenance mode (in which AECD functions are disabled) for after-market devices only
- In general, in other regulation, it is not common that the manufacturer must provide no possibility to deactivate the system.

J subsequently presented AECS-12-12

F wanted to restrict the feature to the automatic call and replace special tool by “OEM specific process” or “OEM specific strategy”. The idea is to avoid fake activation by e.g. children, hence limiting the provision to the automatic activation.

OICA pointed out that restrictions can be accepted for systems of primary importance and primary safety (e.g. stop lamps, brakes etc.) yet such discussion would be quite long in the case of AECS. The experts improved the wording as follows:

**“16.3.5. It shall not be possible to deactivate the automatic AECD by the means of HMI. A temporary deactivation function shall be permitted for the purpose of maintenance and repair.”**

The European Commission requested time to internally study

J wanted an indication to the driver that the AECD is temporarily switched off.

The chair said that a warning to the driver is more necessary in the case of deactivation of the automatic AECD

Conclusion: wording temporarily included until next meeting. Text as in AECS-12-12-Rev.1

#### 4.3.1. Warning signal

#### 4.3.2. Functionality (emission of emergency call, HMI functionality and MSD)

Document: AECS-12-07 & Rev.1 (OICA)  
AECS-12-19 (OICA)

OICA presented the document and made a live presentation of the sound quality of damaged loudspeakers (explanatory notes per document AECS-12-19).

J and D were not convinced that all possible electronic failures can be indicated via HMI. OICA gave the example of UN R10 where the possible influences are indicated via the HMI or UN R13H (wear of the brake linings).

The chair regretted seeing no emerging compromise between the contracting parties and Industry.

He suggested to keep this new 5<sup>th</sup> method between brackets for guidance from GRSG

The European Commission found that idea irrelevant as the 5<sup>th</sup> method is not complete. J could support this idea but requested OICA to propose a complete text with a full list of failures to address.

OICA committed to take this J proposal as a homework.

Conclusion:

- Current text unchanged
- OICA to provide the detailed procedure, and to discuss it with the interested experts beforehand, and present it well enough prior the next meeting (end of March).
- 5<sup>th</sup> method in [ ] until a final decision is done at next meeting.

OICA then presented the proposal for the test methods 1-4 to Annex 9. The OICA expert explained the reasons of the changes to the original proposal. The group also agreed to align the proposal on the decisions relating to Method 5.

The European Commission could not support the new wording for paragraph 4.4. (OICA document), 1<sup>st</sup> because they found it new, second because it is contradictory to some agreement at EU level (infinite value). The delegated act refers to the specifications of the manufacturer (as in the current text of the draft AECS regulation).

The group was informed that VSWR for a normal well-functioning antenna is about 0. Yet it depends also on the design.

#### 4.3.3. Hands-free audio performance

Documents: AECS-12-04 (ITU)  
AECS-12-05 (ITU)  
AECS-12-06 (ITU)

Pre-crash provisions: OICA recalled the context.

Dr. Gierlich presented AECS-12-06. This document was supported by OICA as it was negotiated between some OICA experts and Head-Acoustics.

RUS supported this proposal. The text was slightly amended and the group agreed the ITU approach.

Conclusion: wording adopted for the time being. Interested experts to provide relevant proposal for next meeting.

Post-crash assessment:

RUS presented the document AECS-12-05 and the three proposed options (only 2 are described in the document). 3<sup>rd</sup> option is to basically leave the current text. The expert summarized the possibilities as follows:

1. Improves Annex 9
2. Objective test
3. Current text, very simply with no dedicated document.

RUS found necessary that an objective and repeatable test method be decided.

Dr. Gierlich presented the two 1<sup>st</sup> methods. RUS explained that the concern was about repeatability. The group tried to clarify the text.

OICA had no definitive position yet some remarks:

1. The text seems to be a description of a test set-up, but does not provide any performance requirements nor what to do with the measurements.
2. The proposal increases the number of measurements and tests to be performed, while there was an agreement in principle in the group not to multiply the number of measurements.

OICA recalled that J has no such provisions in their national legislation, RUS only have the current paragraph 2.2.3., EU wanted a more consistent test procedure. Yet OICA had no intention to add new measurements in the vehicle post-crash. OICA could accept the deletion paragraphs 2.2.3. and 2.2.4.

The European Commission clarified that while the Delegated act may not change in the near future, the European Commission could accept some deviating wording as long as the changes are not reducing the performance of the system.

The chair summarized that there is indeed simple requirements in RUS, some requirements in the EU, and requested the experts to make a practical solution. The chair suggested to simplify the procedure to the maximum, because after having performed post-crash assessment, he saw 2 reasonable ways:

1. Leave the requirements close to the EU requirements, applicable to the contracting parties, and not paying attention to repeatability etc.
2. Leave paragraphs 2.2.1. and 2.2.2. such that the voice can be heard.

OICA supported keeping the current text

F supported the OICA position, because the expert found no need to add new protocols and setup for the assessment.

J supported OICA not to change the current proposal

D suggested keeping 2.2.3., with no rating

RUS supported D, because a rating may bring problems in practice.

The chair suggested eliminating only the rating, i.e. deleting paragraph 2.2.4.

D proposed to copy/paste the wording of the delegated act (p20). The chair found the EU procedure complicate and suggested to remain simple.

The European Commission informed that there is no pre-crash test at EU level, hence found



reasonable to deviate from the EU approach in the frame of UNECE.

Conclusion: text as amended adopted.

4.3.4. Power supply

4.4. Vehicle homologation with regard to AECS (Part III)

J was of the opinion that Part III differ only about the approval procedure. Hence it should simply be a copy/paste of the requirements from Parts I and II. J was of the opinion that provisions for the sled test should be added into Part III. Japan feared a relaxation of the provisions due to application via Part III.

OICA anticipated problems that when some features are fully integrated to the vehicle, there may be practical problem (e.g. antenna performance covered by the vehicle body). Japan was convinced that this concern can be addressed most of the time. D, RUS and the European Commission supported the views of Japan. Should the antenna performance be fulfilled by the vehicle body, the logical consequence is that the body would have to be tested on the sled.

OICA pointed out the definition of AECS under Part III which excludes separable components. The chair raised the concern that Part III is a question of principle, as it could offer a lower level of stringency. The Secretariat questioned whether the suppliers will apply to Part I. If not, then the vehicle manufacturers would have no other way than Part III for getting their vehicles approved. The European Commission supported the chair that each parts of the regulation should offer the same level of stringency.

J supported the European Commission, the applicant will mainly be the vehicle manufacturers, but they can cooperate with their suppliers, such that the suppliers perform the sled test.

The chair had the following question: at the time we decided for a 3-part regulation, RUS questioned the experience in the 58 Agreement (e.g. UN R58), this kind of regulation should propose the same level of stringency, the regulation says that the function of rear underrun protection can be fulfilled by different components. The chair supported the concerns of the European Commission and J. the Chair requested CLEPA to provide examples of such applications. CLEPA could not provide such example, but the expert stressed that the principle of the high pulse sled test is still questionable. In term of process, the suppliers can indeed be independent.

J found necessary to amend Part III such that the level of performance be equivalent to that of Parts I and II. J rejected the suggestion of CLEPA to revisit the justifications for a high-G sled test, as it was already covered. The experts said that there may be no applicant to Part III, yet wanted to keep the door open for application to Part III.

OICA referred to their "non-paper" (AECS-12-09), and confirmed that there is a need to keep Part III. The expert pointed out the expected problems when a big sized element must be tested according to Annex 7, while the contracting parties already mentioned their concern for light elements.

The European Commission said that at EU level this question does not exist as the legislation in EU does not foresee such approval procedure.

A debate took place on the way to approve heavy non detachable parts via the sled test.

The chair requested RUS, J and the European Commission to prepare a paper showing:

- Whether there is a need for Part III
- Which would be its structure
- What requirements for achieving the same level of stringency as for Parts I and II.

Conclusion:

- Item to be re-discussed at next session, after all concerns with regard to Parts I and II are cleared.
- contracting parties to provide their position as mentioned above

**5. Schedule of future IG meetings**

AECS-13	12-14 April 2016	Paris (OICA)
GRSG-110	26-29 April 2016	Geneva (Palais des Nations)
GRSG-111	11-14 October 2016	Geneva (Palais des Nations)

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